Appendix F.   Questionnaire for Assessing Characteristics of Regional Building Stock

Workshop to Evaluate the Design and Construction of Local Region

F.1   Part 1: General Information

Name: _____   **Date**: _____

Region or regions you represent: _____

Type of Experience in Region Experience (e.g. designer, inspector, planner, plan checker contractor, etc.)	Number of Years
_____	_____
_____	_____
_____	_____
_____	_____

F.2   Part 2: Specific Design and Construction Practices for the Region

Review the Model Building Types in the Appendix. Do these Model Building Types completely represent the construction types in your region?   That is, describe any building types which you cannot map into the Model Building Types.

_____

_____

_____

Which building code is currently in effect in your region?   _____

Are there building types that are unique to your region or that typify your region (e.g. brownstone, Victorian, adobe block)? Please give a description of these building types and what makes them unique.

_____

_____

_____

_____

_____

_____

_____

Is there a year that you can identify for your region when Unreinforced Masonry (URM) ceased to be built?_____

Is there a year that you can identify in which Reinforced Masonry (RM) began to be built?

_____

_____

Represent the distribution of construction of RM and URM on the graph below.

RM

URM

1900 | year
                        1990
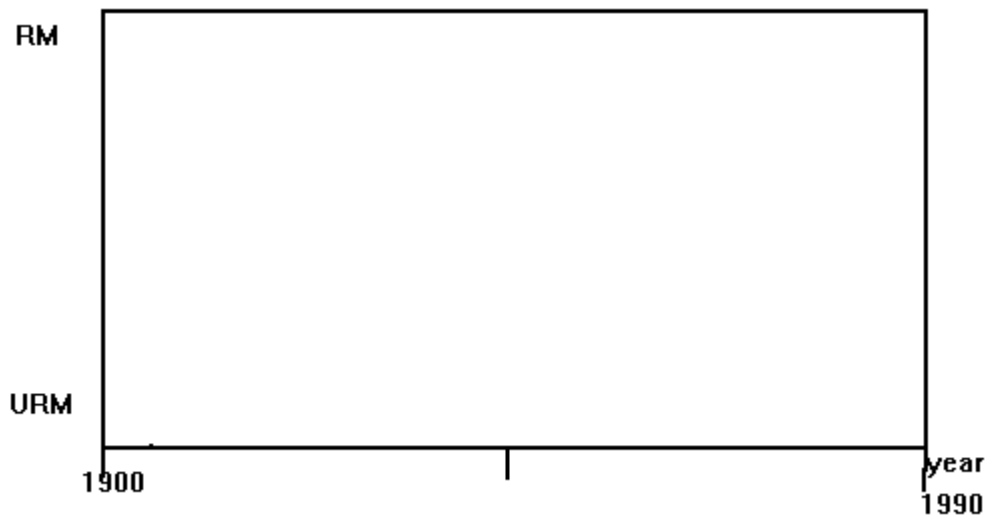
When did you start to build Steel Moment Resistant Frames in your region?

_____

_____

When did you start to build ductile concrete in your region?

_____

_____

_____

Appendix F. Questionnaire for Assessing Characteristics of Regional Building Stock

What is the distribution of ductile versus non-ductile concrete frames for your region:

DUCTILE

NON
DUCTILE

1900   year
              1990

When did you stop building steel frames with URM infill walls?

_____

_____

For high rise structures(8+ stories) in your region can you provide a distribution of structural type over time (steel, concrete, masonry).

percent

year

For low rise large wholesale/light industrial structures in your region can you provide a distribution of structural type over time (steel, reinforced concrete, masonry, tilt-up, wood).

percent

|

year

Reviewing the model building types as described Appendix A, can you identify important "benchmark" years? These would be years when significant code changes occurred in your region so that the performance of the structures, when subjected to natural hazards such as wind earthquake and flood, improved? Some examples might be required bolting of the structure to the foundation, required use of hurricane clips, or improved connection of tilt-up walls to roof diaphragms.

Year   Improvement   Code Requiring Improvement

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

Can you identify when significant changes in building practices occurred in your region that effect the calculation of vulnerability of buildings to natural hazards such as wind,

Appendix F. Questionnaire for Assessing Characteristics of Regional Building Stock

earthquake and flood? Some examples might be introduction of a new building type such as tilt-ups, discontinued use of a particular building material, discontinued use of cripple walls, significant housing development during a particular era.

_____

_____

_____

_____

_____

The current NIBS/FEMA methodology divides structures into three groups (pre-1950, 1950-1970, post-1970). Based upon your answers to the previous questions does this age breakdown make sense for your region? If not can you suggest something that better reflects the design and construction practices of your region? It can have more than three age groupings.

_____

_____

_____

_____

Is there any other information particular to your region that you feel is important assessing building vulnerability?

_____

_____

_____

_____

F.3 Part3: Occupancy to General Building Type Relationships for the Local Region

For several states in your region as shown below, insurance data suggests that the mix of building types in terms of percentage of total square footage is:

State _____:

	Wood Frame	Masonry	Rfd. Concrete	Steel	Light Metal	Mobile Home
Residential						
Commercial						

State _____:

	Wood Frame	Masonry	Rfd. Concrete	Steel	Light Metal	Mobile Home
Residential						
Commercial						

State _____:

	Wood Frame	Masonry	Rfd. Concrete	Steel	Light Metal	Mobile Home
Residential						
Commercial						

State _____:

	Wood Frame	Masonry	Rfd. Concrete	Steel	Light Metal	Mobile Home
Residential						
Commercial						

Based upon your experience, do these relationships look reasonable?   If not which numbers are you questioning?

_____

_____

_____

_____

Use the table below to enter an improved distribution of building types for each occupancy.

Improved General Occupancy to Building Type Relationship for The Local Region

	Wood Frame	Masonry	Reinforced Concrete	Steel	Light Metal	Mobile Home
Residential						
Commercial						

Occupancy to model building type relationships have been developed for several counties based on the analysis of county assessor's records. The occupancy to model building type relationships are based upon percentage of total square footage for each occupancy. You'll note for certain occupancies such as government and non-profit agencies, assessor's files do not provide adequate information to establish a relationship. The occupancy to model building type relationships are found in the Appendix. Please review the appendix and identify which county best reflects your region.

County _____

Based upon your experience, what distributions do you think need revision?

Occupancy   **Problem**

_____

_____

_____

_____

_____

Please enter your improved estimates of occupancy to model building type relationships in the tables below.

URBAN

Label	Class	Wood Frame	Steel	Concrete	Masonry	Mobile Home
RES1	Single Family Dwelling					
RES2	Mobile Home					
RES3	Multi Family Dwelling					
RES4	Temporary Lodging					
RES5	Institutional Dormitory					
RES6	Nursing Home					
COM1	Retail Trade					
COM2	Wholesale Trade					
COM3	Personal and Repair Services					
COM4	Professional/Technical Srv					
COM5	Banks					
COM6	Hospital					
COM7	Medical Office/Clinic					
COM8	Entertainment & Recreation					
COM9	Theaters					
COM10	Parking					
IND1	Heavy					
IND2	Light					
IND3	Food/Drugs/Chemicals					
IND4	Metals/Minerals Processing					
IND5	High Technology					
IND6	Construction					
AGR	Agriculture					
REL	Church/Non Profit					
GOV1	General Services					
GOV2	Emergency Services					
ED1	Schools/Libraries					
ED2	Colleges/ Universities					

SUBURBAN

Label	Class	Wood Frame	Steel	Concrete	Masonry	Mobile Home
RES1	Single Family Dwelling					
RES2	Mobile Home					
RES3	Multi Family Dwelling					
RES4	Temporary Lodging					
RES5	Institutional Dormitory					
RES6	Nursing Home					
COM1	Retail Trade					
COM2	Wholesale Trade					
COM3	Personal and Repair Services					
COM4	Professional/Technical Srv					
COM5	Banks					
COM6	Hospital					
COM7	Medical Office/Clinic					
COM8	Entertainment & Recreation					
COM9	Theaters					
COM10	Parking					
IND1	Heavy					
IND2	Light					
IND3	Food/Drugs/Chemicals					
IND4	Metals/Minerals Processing					
IND5	High Technology					
IND6	Construction					
AGR	Agriculture					
REL	Church/Non Profit					
GOV1	General Services					
GOV2	Emergency Services					
ED1	Schools/Libraries					
ED2	Colleges/ Universities					

F.4   Part 4: General to Specific Occupancy Relationship for the Local Region

Based upon your experience, how would steel frames in your region be distributed among the five types listed below?

Steel Frame Distribution by Percentage of Total Square Footage

	Steel Moment Frame	Steel Braced Frame	Steel Light Frame	Steel Frame w/ Cast-in-Place Concrete Shear Walls	Steel Frame w/ Unreinforced Masonry Infill Walls	Other (Specify)
Low rise						
Mid rise						
High rise						

Confidence: _____

Is there either an age or occupancy factor that would cause you to skew your answers. For example a particular occupancy uses a unique structural type or does not use one of the types listed above. If so state your skewed answer in the table below

Factor Affecting Distribution _____

Steel Frame Distribution by Percentage of Total Square Footage

	Steel Moment Frame	Steel Braced Frame	Steel Light Frame	Steel Frame w/ CIP Concrete Shear Walls	Steel Frame w/ URM Infill Walls	Other
Low rise						
Mid rise						
High rise						

Factor Affecting Distribution _____

Steel Frame Distribution by Percentage of Total Square Footage

	Steel Moment Frame	Steel Braced Frame	Steel Light Frame	Steel Frame w/ CIP Concrete Shear Walls	Steel Frame w/ URM Infill Walls	Other
Low rise						
Mid rise						
High rise						

Factor Affecting Distribution _____

Steel Frame Distribution by Percentage of Total Square Footage

	Steel Moment Frame	Steel Braced Frame	Steel Light Frame	Steel Frame w/ CIP Concrete Shear Walls	Steel Frame w/ URM Infill Walls	Other
Low rise						
Mid rise						
High rise						

Based upon your experience, how would concrete structures in your region be distributed among the five types listed below?

Concrete Distribution by Percentage of Total Square Footage

	Concrete Moment Frames	Concrete Shear Walls	Concrete Frames w/ URM Infill Walls	Precast-Concrete Tilt-Up Walls	Precast Concrete Frames w/ Concrete Shear Walls	Other (Specify)
Low rise						
Mid rise						
High rise						

Confidence: _____

Is there either an age or occupancy factor that would cause you to skew your answers. For example a particular occupancy uses a unique structural type or does not use one of the types listed above. If so state your skewed answer in the table below

Factor Affecting Distribution _____

Concrete Distribution by Percentage of Total Square Footage

	Concrete Moment Frames	Concrete Shear Walls	Concrete Frames URM Infill Walls	Precast-Concrete Tilt-Up Walls	Precast Concrete Frames w/ Concrete Shear Walls	Other
Low rise						
Mid rise						
High rise						

Factor Affecting Distribution _____

Concrete Distribution by Percentage of Total Square Footage

	Concrete Moment Frames	Concrete Shear Walls	Concrete Frames URM Infill Walls	Precast-Concrete Tilt-Up Walls	Precast Concrete Frames w/ Concrete Shear Walls	Other
Low rise						
Mid rise						
High rise						

Factor Affecting Distribution _____

Concrete Distribution by Percentage of Total Square Footage

	Concrete Moment Frames	Concrete Shear Walls	Concrete Frames URM Infill Walls	Precast-Concrete Tilt-Up Walls	Precast Concrete Frames w/ Concrete	Other

				Shear Walls	
Low rise					
Mid rise					
High rise					

Based upon your experience, how would masonry structures in your region be distributed among the three types listed below?

Masonry Distribution by Percentage of Total Square Footage

	Reinforced Masonry Walls w/ Wood/ Metal Deck Diaphragms	Reinforced Masonry Walls w/ PC Diaphragms	Unreinforced Masonry (URM) Bearing Walls	Other
Low rise				
Mid rise				
High rise				

Confidence: _____

Is there either an age or occupancy factor that would cause you to skew your answers. For example a particular occupancy uses a unique structural type or does not use one of the types listed above. If so state your skewed answer in the table below

Factor Affecting Distribution _____

Masonry Distribution by Percentage of Total Square Footage

	Reinforced Masonry Walls w/ Wood/ Metal Deck Diaphragms	Reinforced Masonry Walls w/ PC Diaphragms	Unreinforced Masonry (URM) Bearing Walls	Other
Low rise				
Mid rise				
High rise				

Factor Affecting Distribution _____

Masonry Distribution by Percentage of Total Square Footage

	Reinforced Masonry Walls w/ Wood/ Metal Deck Diaphragms	Reinforced Masonry Walls w/ PC Diaphragms	Unreinforced Masonry (URM) Bearing Walls	Other
Low rise				
Mid rise				
High rise				

Factor Affecting Distribution _____

Masonry Distribution by Percentage of Total Square Footage

	Reinforced Masonry Walls w/ Wood/ Metal Deck Diaphragms	Reinforced Masonry Walls w/ PC Diaphragms	Unreinforced Masonry (URM) Bearing Walls	Other
Low rise				
Mid rise				
High rise				